Title **Chemistry: The Central Science**

Publisher **Pearson Education/Prentice Hall**

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Course (AP) Chemistry Level High Copyright Date 2002

Overall Strengths and/or Weaknesses

Disclaimer: Comments on the strengths and/or weaknesses of each book or program were written by members of the State Textbook/Instructional Materials Review Team and reflect their opinions. They do not reflect the opinions of the State Textbook Commission nor the Kentucky Department of Education. In addition, the State Textbook/Instructional Materials Review team completed each evaluation form during the week of July 9-13, 2001. In order to maintain the integrity of the review team's comments, editing was limited to spelling and punctuation.

Recommended by Reviewers to State Textbook Commission as a "Basal" textbook or program

CONTENT / PROCESS

Strengths The text provides relatively easy readability without sacrificing content. The problems are given in the context that a student would see a reason for the assignment or a connection to real-life. The text is comprehensive in nature and is written in a friendly tone. It presents complicated material in an understandable manner. The Chemistry and Life features relate chemistry to everyday observations and situations to help stimulate student interest.
Weaknesses As with other AP texts, the book does not accommodate different learning styles or those with special needs.

ASSESSMENT

Strengths Sample and practice exercises (with solutions and answers) are found in each chapter section. Chapter review exercises are grouped according to identified sections. Chemical application and essays were observed throughout the text. Student and teacher CD-ROMS provide for a wide variety of assessment materials (e.g. interactive quizzes, test item file, and Companion Website Plus (available at additional cost)).
Weaknesses Although chemical application and essays were observed throughout, no instances requiring students to apply such knowledge or skills in real-life situations were noted. Few examples of cross-curricular learning were found. Individual (sample/practice exercises and student CD-ROM Interactive quizzes), demonstrations, and test item file bank were the only assessments observed.

ORGANIZATION AND STRUCTURE

Strengths The text is student-friendly with graphics, visuals, and lots of practice problems. Also, the chapter summaries and problems are organized by section. The teacher text includes reference to the demonstration disc and provides ideas for demonstrations and common student errors.
Weaknesses None noted.

TECHNOLOGY

Strengths The student CD-ROM is easy to install and to navigate. The material is useful and correlates well with the text. The use of the software to answer end of the chapter questions would help hold student interest and would enhance their understanding.
Weaknesses The CD-ROM ran slowly on the KETS level computer on which it was installed. The Matter2000 disc that includes the presentations and videos is not included in the package (though it is available on the web site)

RESOURCE MATERIALS

Strengths Instructor's Resource Manual and Annotated Instructor's Edition provide media resources, common misconceptions, lecture outlines, demonstrations, and further readings. Activities are designed and intended for the Advanced High School Student. The Central Science Live CD-ROM provides supplemental resources designed specifically for students. Instructor's Resource Manual provides media resources, lecture outlines, common misconceptions, further readings and literature demonstrations.
Weaknesses No examples of family and/or community involvement were noted.

OTHER COMMENTS

This book is recommended as an AP text. It would not be appropriate for high school chemistry. It is a traditional college textbook that focuses on problem-solving and content. The support materials include a guide to common student misconceptions. There are no suggested demonstrations correlated to the text.

Content / Process

1.Material is comprehensive and includes content emphasized in Kentucky's Learning Goals and Academic Expectations and supported by the Core Content for Assessment, Program of Studies, and relevant National Standards. (Academic Expectations, 1. Program of Studies, and Core Content for Assessment criteria checklists will be addendums).
Strong
This text is very comprehensive and detailed. It is clearly written. The chemistry Core Content is covered in-depth. The core content in the area of application and scientific inquiry are not covered because the text is intended to be an AP level book. These college level books do not contain inquiry labs or discovery learning and activities. However, for its purpose, the book is excellent.

2. Content appears to be free from factual errors and reflects current research.
Strong
No errors were found. The material contains current information about semiconductors, modern materials, and organic chemistry. Again, little connections are made between the material and the current research because of its purpose.

3. Content makes connections to other content areas across the curriculum.
Missing
As with other AP level texts, this text does not make connections across the curriculum. One exception would be in the area of biochemistry in which pH is related to IV solutions and blood chemistry.

4. Concepts and application of skills to real-life situations are introduced when appropriate.
Adequate
As with other AP texts, real-life situations are not the focus of the text. It is typical of its level. One exception would be in the problems at the end of the chapter. These problems do apply in many cases to environmental or medical problems. The Chemistry and Life scenarios are unusual at this level of text. These vignettes do describe how chemistry impacts society and individuals.

5. Content appears to be free of social, ethnic, racial, religious, gender, and geographic bias.
Strong
No biases were noted.

6. Material is flexible and accommodates various learning styles, interest/ability levels, and intelligences, including adaptations and accommodations for students with special needs.
Weak

Because this is an AP text, no accommodations are made for various learning styles, ability levels, or students with special needs.

7. Reading level is appropriate for interest and ability level of intended student group; level remains consistent throughout.
Strong
This text has a reading level of 8.4. This makes the text readable for all AP students though it maintains its scientific integrity. Students would be able to read this book for understanding and use it as a resource in their class.

Assessment

1. Student assessment is integrated and aligned with the instructional materials.
Strong
Sample and practice exercises (with solutions and answers) are found in each chapter section. Chapter review exercises are grouped according to identified sections.

2. Assessment materials provide opportunities for students to apply knowledge and skills in real-life situations and learning across the curriculum.
Missing
Although chemical application and essays were observed throughout, no instances requiring students to apply such knowledge or skills in real-life situations were noted. Few examples of cross-curricular learning were found.

3. A variety of assessments (e.g., individual, small group, oral, demonstrations, presentations, self and peer, open response, performance, portfolio prompts) is included.
Weak
Individual (sample/practice exercises and student CD-ROM Interactive quizzes), demonstrations, and test item file bank were the only assessments observed.

4. Assessment materials provide for integration of technology in the assessment process.
Strong
Student and teacher CD-ROMS provide for a wide variety of assessment materials (e.g. interactive quizzes, test item file, and Companion Website Plus).

Organization and Structure

1. The textbook is well-organized, and is student and teacher friendly.
Strong
The text includes many example and sample problems that allow the student to practice work often. The material is easy to read and the chapter summaries are organized by sections. The organization of the text is typical of most AP texts with the exception of the late placement of the thermodynamics chapter. The teacher edition includes reference to the CD-ROM presentations and references to appropriate demonstrations in the margins of the text.

2. Construction seems durable and conducive to student use (e.g., size, weight).
Adequate
The text appears to be of average size and construction.

Technology

1. Instructional materials contain activities that incorporate the use of technology (e.g., CD-ROMs, DVDs, laser disks, probes, graphical analysis programs).
Strong
The text includes a student CD-ROM that provides demonstrations, additional explanations, and quizzes. The answers to the quizzes can be stored and retrieved. This disc also includes demonstrations that relate to questions at the end of each chapter. These require students to watch the video and understand the concept before they can answer the question. An additional CD-ROM is available that includes presentations of the graphics in the text, movies, and lecture slides using PowerPoint. This information is also available free on the web.

2. Various forms of media are included (e.g., CDs, recordings, videos, cassette tapes, computer software).
Adequate
Only the student CD-ROM and a computer test bank is included in the package. A second CD-ROM and set of videotapes are available for additional cost. The student CD-ROM can be used in conjunction with a free web site that includes additional examples and information.

3. The textbook is available online.
Missing
The textbook is not available online. The student CD-ROM links to the web site to provide additional resources. The students can view demonstrations, practice questions, and view lecture slides. A teacher can also create a web site for his or her class by using a second site that requires funding.

Resource Materials

1. Teacher material coordinates easily with student material (e.g., accompaniments included, student pages shown, instructional technology indicated).
Strong
Instructor's Resource Manual and Annotated Instructor's Edition provide media resources, common misconceptions, lecture outlines, demonstrations, and further readings.

2. Extension activities are included that adapt to various learning styles, interest/ability levels, and intelligences, including adaptations and accommodations for students with special needs.
Weak
Activities are designed and intended for the Advanced High School Student. The Central Science Live CD-ROM provides supplemental resources designed specifically for students.

3. Resources provide references, background information, objectives, hints, and advice for lesson implementation.
Strong
Instructor's Resource Manual provides media resources, lecture outlines, common misconceptions, further readings and literature demonstrations.

4. Suggestions are made for family and community involvement.
Missing
No examples of family and/or community involvement were noted.

5. The included media are durable, easy to use, and have technical merit.
Strong
CD-ROM's and Website Plus were easy to use and provide valuable resource supplements.

6. Resources are available online.
Strong
Central Science Live and Companion Website Plus are available supplements.